INEEL REPORTER
A closer look at environmental management at the INEEL
April 1999

A Look Inside

More Information

For more information about WIPP, visit their website at http://www.wipp.carlsbad.nm.us/

World's First Underground Waste Repository Begins Operations

The first shipment of defense-generated transuranic radioactive waste arrives safely at the Waste Isolation Pilot Plant.

On March 26, 1999, Energy Secretary Bill Richardson announced that the first shipment of defense-generated transuranic radioactive waste arrived safely at the U.S. Department of Energy's Waste Isolation Pilot Plant. Hundreds of people were on hand to watch as the first shipment arrived at the WIPP in New Mexico. The shipment came from the DOE's Los Alamos National Laboratory in New Mexico.

"This is truly a historic moment — for the Department of Energy and the nation," said Secretary Richardson. "This shipment to WIPP represents the beginning of fulfilling the long-overdue promise to all Americans to safely clean up the nation's Cold War legacy of nuclear waste and protect the generations to come."

In the 1950s, the National Academy of Sciences recommended disposal of radioactive waste in stable geologic formations, such as deep salt beds. Government scientists searched for an appropriate site during the 1960s, testing the area of southeastern New Mexico in the 1970s. Congress authorized construction of the WIPP in 1979 and DOE completed construction in the late 1980s.

Originally scheduled to begin receiving waste in 1988, the WIPP's opening was delayed because of several lawsuits and the lack of a specific regulatory framework. That changed in 1992 when Congress named the U.S. Environmental Protection Agency as the WIPP's primary regulator.

The EPA certified in May 1998 that the WIPP met all applicable federal standards for disposal of transuranic waste.

The WIPP, a cornerstone of the DOE's cleanup effort, is the world's first underground repository for permanent disposal of defense-generated transuranic waste left from research and production of nuclear weapons.

Moving TMI-2 Spent Fuel

INEEL met another Settlement Agreement milestone with the first shipment of TMI-2 spent fuel into dry storage.

The INEEL moved its first shipment of Three Mile Island-2 spent fuel and core debris into dry storage, meeting the March 31, 1999 milestone in the 1995 Idaho Settlement Agreement.

With the first shipment completed, the INEEL begins a two-year campaign to move all the TMI-2 material out of underwater storage at Test Area North and into the dry storage facility at the Idaho Nuclear Technology and Engineering Center. The job must be completed by June 30, 2001.

The dry storage facility will eventually hold 344 containers of spent fuel and core debris.

The dry storage facility will eventually hold 344 containers of spent fuel and core debris. The containers will be taken out of underwater storage at TAN, dried in a specially-designed drying system, and then placed in carbon-steel dry shielded canisters. Each canister holds up to 12 containers. The canisters will be placed one at a time in a special stainless steel shipping cask and trailer system and transported to the dry storage facility. One dry shielded canister will be placed horizontally into each of 29 concrete horizontal storage modules for interim storage until the material is moved to a permanent repository.

Each module measures 10 feet wide, 15 feet tall, 18 feet deep and weighs 120 tons. Thirty modules sit on an 18-inch-thick concrete pad. One module will be left empty for standby use. The patented design for shipping and storage is owned by Transnuclear West, a subcontractor of Newport News Shipbuilding, the contractor that managed construction of the dry storage facility.

The INEEL has been storing TMI-2 spent fuel and core debris since the first shipment arrived here in July 1986 following the 1979 accident in Pennsylvania. The last shipment arrived in April 1990. The INEEL was selected to take the material for examination and research because of the Site's long history in nuclear safety research, its technical expertise and because the laboratory had specialized facilities for examining and storing the material.

Getting a Handle on Low-Level Waste

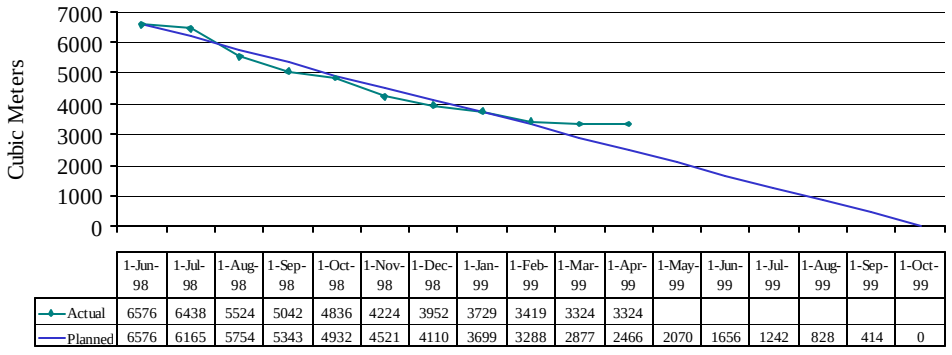
Moving low-level waste from various locations to the RWMC improves safety and efficiency.

The INEEL is managing low-level waste more effectively by removing it from various temporary storage facilities across the Site and disposing of it at the Radioactive Waste Management Complex. Moving the waste to RWMC lowers the risk of storing and handling it at the individual facilities while improving the level of safety in managing the waste.

On June 1, 1998, the INEEL had over 6,600 cubic meters (233,100 cubic feet) of low-level waste backlogged in temporary facilities around the Site. Today, that backlog has been reduced to less than 3,300 cubic meters and by Sept. 30, the backlog will be gone. The waste will have been disposed of at the RWMC.

In June 1998, LMITCO and DOE-Idaho established the definition of the low-level waste backlog and detailed a plan for its elimination. Defining the amount of low-level waste to be disposed of allowed the project team to focus on removing the waste from its current location at various facilities to final disposal at the Radioactive Waste Management Complex.

Some of the waste containers date back to 1986. The wooden boxes are showing signs of aging due to weather and other conditions. By disposing of these boxes in one place, they can be treated with a fire retardant paint and covered with soil, minimizing the risk across the INEEL.



	1-Jun-98	1-Jul-98	1-Aug-98	1-Sep-98	1-Oct-98	1-Nov-98	1-Dec-98	1-Jan-99	1-Feb-99	1-Mar-99	1-Apr-99	1-May-99	1-Jun-99	1-Jul-99	1-Aug-99	1-Sep-99	1-Oct-99
Actual	6576	6438	5524	5042	4836	4224	3952	3729	3419	3324	3324						
Planned	6576	6165	5754	5343	4932	4521	4110	3699	3288	2877	2466	2070	1656	1242	828	414	0

Low-Level Waste

Low-level waste is unique in that its definition is based on what it is not, rather than what it is. Low-level waste is not high-level waste, transuranic waste, or spent nuclear fuel. The INEEL generates low-level waste during the course of everyday operations.

The *INEEL Reporter* is a bimonthly DOE newsletter for the public produced by the INEEL Environmental Restoration and Waste Management programs.

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Since its inception in 1975, the INEEL D&D Program has removed more than 100 surplus buildings and structures at the INEEL.

Three D&D Projects Changing the Look of the INEEL

D&D of the Initial Engine Test Facility, Waste Calcining Facility, and Air Support Building are changing the INEEL landscape.

The INEEL Decontamination and Dismantlement Program recently has been changing the INEEL landscape by removing three major facilities. Two of the facilities – a nuclear jet engine facility and the Waste Calcining Facility –were fixtures at the INEEL since the 1950s and 1960s. The third facility – the Certification and Segregation Building – was an INEEL landmark that could be seen for miles by motorists traveling U.S. Highway 20/26.

Final Chapter Closes on Nuclear Jet Engine

During the 1950s, as the Cold War between the United States and Russia was building, President Dwight D. Eisenhower was advised that the Russians were developing a nuclear powered aircraft. Not to be outdone, the U.S. began development of engines for such a plane.

The Aircraft Nuclear Propulsion Program was born. A nuclear powered aircraft could have been useful: conducting aerial surveillance for several days without refueling or even traveling to remote locations to drop bombs or launch missiles, again without the need to refuel. Buildings near INEEL's Test Area North were used to test the experimental jet engines from the late 1950s until 1961. But in 1961, due to the high cost and strong recommendations that a nuclear powered aircraft should not be allowed to fly over the U.S., President Kennedy discontinued the project — before a plane was ever constructed.

The INEEL Decontamination and Dismantlement Program is removing the remaining buildings near the Test Area North that that were used during testing of the engines. The engines themselves are now on public display at the Experimental Breeder Reactor-I facility.

Innovative Approach for Closure of the Old Waste Calcining Facility

In March, construction crews began demolishing the old Waste Calcining Facility at the Idaho Nuclear Technology and Engineering Center. The demolition is the second phase an innovative, three-phase closure project at the laboratory and will result in the above ground portion of the building being reduced to rubble. The final phase will occur this spring when the rubble is grouted and covered with a protective concrete cap.

The first phase of the closure project, completed in 1998, involved filling three basement levels of the facility, including rooms, hallways, pipes and vessels, with more than 4,200 cubic yards of grout. The grout created an underground monolith that encapsulates and prevents migration of any contaminants.

The innovative closure-in-place technique offers several advantages over a traditional decommissioning and dismantling. It significantly reduces potential worker potential exposure to contamination, greatly reduces risk to the environment, generates significantly less contaminated waste (about 25 cubic yards versus 385 cubic yards), is less expensive ($11 million versus nearly $150 million), and will be finished in a quarter of the time.

This is the first time this closure technique has been used at the INEEL. Fittingly, it was done on a facility that performed another first—calcining liquid radioactive waste. Calcining converts the liquid waste into a dry, granular powder that resembles laundry detergent. The facility operated from 1963 until 1981. It was replaced by the New Waste Calcining Facility, which is operating today.

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INEEL Landmark Removed

Construction crews removed the Certification and Segregation Building (a.k.a. air support building) at the Radioactive Waste Management Complex. The building, with its distinctive domed structure, was an INEEL landmark that could be seen for miles by motorists traveling U.S. Highway 20/26.

The domed structure was constructed in 1984 using steel girders and a fabric outer shell. Exterior fans kept the building inflated. It was 150 feet wide, 650 feet long and 55 feet tall, with a floor area of 97,500 square feet.

Until 1997, the Certification and Segregation Building stored thousands of drums of transuranic waste ultimately destined for the Waste Isolation Pilot Plant in New Mexico. The drums are now located in regulatory-compliant storage buildings at the RWMC where they can be more easily inspected.

The land area where the building stood will be turned over to BNFL, Inc., for the construction of the Advanced Mixed Waste Treatment Facility. When completed, the facility will treat and repackage stored transuranic and mixed wastes to remove the hazardous constituents, making the waste suitable for shipment to WIPP. Construction is set to begin in July 1999.

More Information

For more information about INEEL's D&D Program, visit their webpage at: www.inel.gov/environemnt/demolition/

Briefly...

The High-Level Waste and Facilities Disposition Draft Environmental Impact Statement is scheduled to be issued for public comment in mid-summer 1999. The draft impact statement analyzes the alternatives for treating INEEL high-level waste and closing related facilities. The Idaho Settlement Agreement requires DOE to begin negotiations with the state of Idaho for a final treatment strategy before the end of this year. A summary of the document written in layman's terms will be printed in regional newspapers and a series of public meetings will be held throughout the state following distribution of the draft impact statement.

The INEEL's Transuranic Waste Program received certification from the Environmental Protection Agency on its quality assurance program in February. The certification, issued to the DOE-Carlsbad Area Office, stated the INEEL has properly executed a quality assurance program in accordance with the requirements for contact-handled debris waste.

DOE-Idaho has issued the 1999 National Environmental Policy Act Annual Summary. The summary outlines plans to complete the environmental impact statement on the Advanced Mixed Waste Treatment Project and continue work on the draft impact statement for high-level waste. Four environmental assessments might be undertaken in 1999 including evaluating the environmental impacts resulting from the closure and deactivation of a building formerly used for spent nuclear fuel management at INTEC, decontaminating and dismantling a building at Test Reactor Area where two water-cooled research reactors were housed, the impacts of building a 15-acre laboratory facility in Idaho Falls and the impacts of building a facility on the INEEL to simulate earthquakes of various intensities and hurricane-force winds. Copies of the annual summary are available in the DOE Public Reading Rooms. It is also available on the INEEL homepage at http://www.inel.gov/environment/documents/documents.html.

The Environmental Impact Statement and Record of Decison released for the Advanced Mixed Waste Treatment Project. DOE released the final environmental impact statement and the Record of Decision on the potential impacts to the environment of a proposed new waste treatment facility at the laboratory. The Record of Decision means DOE will implement the proposal by BNFL, Inc., to construct and operate the facility. The Advanced Mixed Waste Treatment Project will retrieve, characterize, treat, and package for disposal at the Waste Isolation Pilot Plant in New Mexico or another appropriate facility, approximately 65,000 cubic meters of transuranic waste currently stored at the Radioactive Waste Management Complex. Copies of the final environmental impact statement are available in DOE Public Reading Rooms and at public and university libraries in Idaho.

Get Involved

Citizens are encouraged to get involved in decision-making at the INEEL by reviewing and commenting on documents, attending public meetings, and requesting briefings or tours. Information about these public involvement activities can be obtained through:

Target Mailing Lists

Mailing lists are continually updated so interested citizens and groups can automatically receive general or specific INEEL information (electronically or through U.S. Mail). You can be added to mailing lists by calling the INEEL toll-free number.

Toll-Free Phone Number

To obtain specific documents or other information, request a speaker or briefing on a particular topic, inquire about public meetings or public comment periods, or schedule a tour of INEEL, call the INEEL toll-free number at 1 (800) 708-2680.

Videos/Instructional Materials

Videos and brochures are available on a variety of subjects including the Snake River Plain Aquifer, waste management, and general INEEL history. To request these items, call the INEEL toll-free number.

Internet

The INEEL Home Page is available at http://www.inel.gov. Specific INEEL environmental information is available at http://www.inel.gov/environmental-frame.html. The INEEL Administrative Record is available at http://ar.inel.gov/home.html.

Information Repositories

DOE maintains three information repositories throughout Idaho. The Boise State University repository will be available in October. Information repositories are collections of documents that provide detail and backup information on INEEL cleanup projects.

INEEL Technical Library
DOE Public Reading Room
1776 Science Center Drive
Idaho Falls, ID 83415

Albertson Library
Boise State University
1910 University Drive
Boise, ID 83725

University of Idaho Library
University of Idaho Campus
434 2nd Street
Moscow, ID 83843

INEEL Idaho Falls Office

The INEEL Community Relations Office is located in Idaho Falls and can provide information and briefings on environmental management topics. Call the INEEL Community Relations Plan Coordinator, Erik Simpson, at (208) 526-4700, or call the INEEL toll-free number.

INEEL Boise Regional Office

An INEEL Regional Office is located in Boise to provide information and other resources for those living in the western portion of the state. The office is located at 805 West Idaho Street, Suite 301, Boise, Idaho 83703, or call 208-334-9572.

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Calendar

May

- 1-31 Power Burst Facility/Auxiliary Reactor Area (Waste Area Group 5) Public Comment Period*
- 17 Power Burst Facility/Auxiliary Reactor Area (Waste Area Group 5)Public Meeting, Idaho Falls, Shilo Inn*
- 18 Power Burst Facility/Auxiliary Reactor Area (Waste Area Group 5)Public Meeting, Boise, Doubletree Downtowner*
- 19 Power Burst Facility/Auxiliary Reactor Area (Waste Area Group 5)Public Meeting, Lewiston, Red Lion Inn*
- 18-19 INEEL Citizens Advisory Board Meeting, Lewiston, Red Lion Inn

**Tentative dates*

June

- Test Area North (WAG 1) Record of Decision expected
- 5 INEEL 50th Anniversary Open House

July

- Idaho Nuclear Technology and Engineering Center (WAG 3) Record of Decision expected
- 20-21 INEEL Citizens Advisory Board Meeting, Idaho Falls, Willard Arts Center

August

- 1 High-Level Waste Environmental Impact Statement Public Comment Period Begins (ends Oct. 1)

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Address Service Requested